

We claim:

1. A catalyst composition for the oxychlorination of ethylene, comprising a mixture of metal salts on a support, where said metal salts are applied to the support in such ratios that the catalyst composition comprises

- a) from 3 to 12% by weight of copper as copper salt,
- b) from 0 to 3% by weight of an alkaline earth metal as alkaline earth metal salt,
- c) from 0 to 3% by weight of an alkaline metal as alkaline metal salt,
- d) from 0.001 to 0.1% by weight, preferably from 0.005 to 0.05% by weight, of at least one metal selected from the group consisting of ruthenium, rhodium, palladium, osmium, iridium and platinum, and/or from 0.0001 to 0.1% by weight, preferably from 0.001 to 0.05% by weight, of gold, as corresponding metal salt or tetrachloroauric acid,

where all percentages by weight are based on the total weight of the catalyst including support material.

2. A catalyst composition as claimed in claim 1, wherein the metal salts are selected from among metal halides, metal oxyhalides and metal oxides of the respective metal and tetrachloroauric acid.

3. A catalyst composition as claimed in claim 2, wherein the metal halides, preferably the metal chlorides, of the respective metal are used.

4. A catalyst composition as claimed in any of claims 1 to 3, wherein the component d) used is a ruthenium salt or a gold salt.

5. A catalyst composition as claimed in any of claims 1 to 4, wherein the component b) used is a magnesium salt.

6. A catalyst composition as claimed in any of claims 1 to 5, wherein the component c) used is a potassium salt.

7. A catalyst composition as claimed in any of claims 1 to 6, wherein the support used is aluminum oxide.
- 5 8. A catalyst composition as claimed in any of claims 1 to 7, wherein the support has a pore volume in the range from 0.15 to 0.75 cm<sup>3</sup>/g.
9. A catalyst composition as claimed in any of claims 1 to 8, wherein the specific surface area of the support used is in the range from 20 to 400 m<sup>2</sup>/g.
- 10 10. A catalyst composition as claimed in any of claims 1 to 7 which is used as fixed-bed catalyst and has the shape of hollow cylinders or annular pellets whose end faces are rounded both to the outer edge and to the edge of the central holes.
- 15 11. A process for preparing 1,2-dichloroethane by oxychlorination of ethylene in the presence of a catalyst composition as claimed in any of claims 1 to 10 as catalyst.
12. A process as claimed in claim 11 which is a circulation reactor process.
- 20 13. A process as claimed in claim 11 or 12, wherein the catalyst is used as a moving bed.
14. A process as claimed in claim 11 or 12, wherein the catalyst is used as a fixed bed.
- 25 15. A process as claimed in claim 14, wherein the catalyst is used as a fixed bed in the form of hollow cylinders or annular pellets whose end faces are rounded both to the outer edge and to the central holes.